Scottish Agricultural Science Agency

The UK/EU experience. Statutory control measures: The EU PCN Directive

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Proposed New PCN Directive

- Several attempts over the last 20 years to bring the 1969 EU PCN Directive into line with other phytosanitary legislation
- Only recently has the European Commission had sufficient resources to produce a draft of a new Control Directive
- A new draft was drawn up by the Commission, taking advice from a working group of experts on the regulation of PCN
- Proposal first considered by an EU Council Working Group on 24 May 2005, first detailed read through on 3 May 2006
- Regulatory Impact Assessment conducted by UK Presidency of EU and presented on 30 November 2005
- Requires acceptance by 25 current EU Member States - only 6 Member States in 1969

International Standard on Phytosanitary Measures (ISPM 16): Quarantine Pests & RNQPs

Defining Criteria	Quarantine Pest	Regulated Non-Quarantine Pest
Pest status	Absent or of limited distribution	Present and may be widely distributed
Pathway	Phytosanitary measures for any pathway	Phytosanitary measures only on plants for planting
Economic impact	Impact is predicted	Impact is known
Official control	Under official control if present with the aim of eradication or containment	Under official control with respect to the specified plants for planting with the aim of suppression

Current PCN Directive 69/465/EEC

Article 2

The Member States shall provide that **seed potatoes intended for marketing** may be produced only on plots which, on official investigation, have been recognised as uncontaminated by Potato Cyst Eelworm.

By taking phytosanitary measures only on plants for planting, the 1969 PCN Directive may be viewed as treating PCN as regulated non-quarantine pests (RNQPs)

EU consensus – PCN should be treated as quarantine pests

Key elements of proposed new PCN Directive

1. recognizes *Globodera pallida* and *G. rostochiensis*
2. sets out a harmonized procedure for determining the presence of PCN
3. sets out a requirement for an annual survey of ware potato land
4. extends testing to land intended for the production of planting material of all PCN hosts and plants likely to be grown in rotation with potatoes (leeks, brassicas, strawberries, bulbs etc.)
5. provides an exemption for farm-saved seed potatoes and plants only if they are to be planted at the same place of production

Key elements of proposed new PCN Directive

7. no potatoes for planting may be grown on PCN contaminated land (as with 69/465/EEC)
8. ware potatoes may be grown on contaminated land, providing the land is subject to an official control programme aimed at the suppression of PCN
9. measures required to minimise the risk of spread of PCN with contaminated potatoes and waste
10. resistant varieties are recognized as integral to PCN control and a protocol for resistance testing is set out in an annex to the Directive
11. provision of a definition of varietal resistance to PCN

Harmonized Soil Sampling (Article 5.1)

- 1. In the case of seed potatoes intended for the production of seed potatoes… the official investigation… shall involve sampling and testing for the presence of potato cyst nematodes in accordance with point 1 of Annex II.

Soil Sampling (Annex II point 1)

- With reference to the sampling and testing for the official investigation… :

  sampling shall involve a sample with the standard size of at least 1500 ml soil/ha collected from at least 100 cores/ha preferably in a rectangular grid of not less than 5 meters in width and not more than 20 meters in length between sampling points covering the entire field. The whole sample shall be used for further examination.

How was this rate arrived at?

Annex II – Sampling method proposal

- Drawn up by Münster working group in May 2004
- Based on best available models of aggregated field distributions of PCN (Been & Schomaker - NL)
- Assumptions include:

a) One live cyst to be found
b) Any cyst present in the sample will be found
c) Probability of detection should be at least 90%
d) Increasing number of cores above 100/ha has relatively limited impact on probability of detection

- i.e. sampling rate comparable with EU Directives on quarantine bacterial pathogens: Ring Rot & Brown Rot

Annex II – Sampling method proposal

- 1st Proposal: aim of detection of a single focus of infestation within 1 ha with a peak density of 50 cysts/kg (0.3 million cysts/ha)
- Model - 90% detection chance requires 10 litres soil/ha
- Conclusion – Unrealistic sampling rate for routine testing within EU, therefore 90% chance of detection aimed at higher PCN populations

However, 10 litres soil/ha may provide a suitable sampling rate for earlier detection of PCN infestation in areas where PCN freedom is the expectation

Annex II – Sampling method proposal

- Revised Proposal: aim of detection of a single focus with a peak density of 100 cysts/kg and three smaller foci of 50 cysts/kg within 1 ha (1.55 million cysts/ha)
- Model - 1500ml sample - 92% probability of detection

Such a high level of PCN infestation is likely to have developed over several rotations of potato production

Findings of PCN (Article 8)

- 8.1 When potato cyst nematodes are found in the official investigation… the responsible official bodies shall ensure that a document is issued stating that the field has been investigated or surveyed and potato cyst nematodes have been found

PCN Contaminated Land (Article 9)

- Member States shall prescribe that on a field for which a document as referred to in Article 8 has been issued:

i) no potatoes intended for the production of seed potatoes, including farm saved seed, shall be planted, and

ii) no plants listed in Annex I, intended for replanting, shall be planted

Ware production

- In the case of fields to be used for planting potatoes, other than seed potatoes, these fields shall be subject to an official control programme aiming at least at the suppression of potato cyst nematodes

Summary - Proposed New PCN Directive

Key Implications for Seed Production

- The adoption of a pre-crop sampling methodology harmonized across the EU
- Standard sampling rate

Summary - Proposed New PCN Directive

Key Implications for Ware Production

(1) Knowledge: Official surveys to be carried out on of land used for growing potatoes (0.5% p.a.) other than for seed

(2) Control: Contaminated fields to be subject to an official control programme, using resistant varieties where appropriate

[The adoption of a harmonized methodology for assessing resistance to PCN within the EU]

(3) Prevention of spread (with farm saved seed)

(4) Tighter controls on contaminated potatoes and waste

International Standard on Phytosanitary Measures (ISPM 16): PCN treated as a Quarantine Pest

Defining Criteria	Quarantine Pest	Revised EU Directive
Pest status	Absent or of limited distribution	Biology suggests change in distribution unlikely
Pathway	Phytosanitary measures for any pathway	Addressed through tighter official controls
Economic impact	Impact is predicted	Unchanged: Impact known
Official control	Under official control if present with the aim of eradication or containment	Greater control on plants for planting (incl. farm saved seed) and survey of ware potato production (0.5%)

Reaction to draft PCN Directive

Brussels –

- Welcomed by nearly all EU Member States
- Concern about costs of extra work – would the Commission fund this? - No
- Desire to see ‘a level playing-field’ – similar testing procedures, similar charges to producers
- Under UK presidency of EU a questionnaire was issued to all Member States to gather information for a cost-benefit analysis
- Has too much freedom been allowed to Member States, i.e. the official control programme, the definition of a field as the area of land over which control is exerted?

Other Reactions – UK & elsewhere

- Should PCN be treated as a quarantine organism?
- Can the industry afford such an onerous testing regime?
- Will the benefits justify the extra cost?
- Could such extra costs be targeted more effectively, e.g. in Scotland, better PCN control could be achieved from testing all land to be used for any potato production?
- What is the purpose of surveying just 0.5% of ware land?

Impact assessment in the EU

- Some countries have a high incidence of PCN infestation, e.g. over 50% of ware potato land in England & Wales is infested with PCN
- Other countries have very low infestation levels – 55% of potato production land in the EU has an incidence of infestation of less than 1%
- No country, or potato producing region within the EU, claims total freedom from PCN
- Intensive sampling for PCN is costly – the benefits gained relate to the area of land remaining free from PCN
- Countries with a high incidence of PCN have less to gain

Lessons for the USDA

- Containment and eradication of PCN is difficult and costly
- The longer PCN is established, the more widespread it becomes and the costs of containment and eradication increase
- Routine screening of land (under dresser soil samples – tare samples?) can provide valuable information
- High intensity sampling is necessary to detect low level (early) infestations of PCN in fields
- Risks of spread to and from infested areas must be assessed and followed up by appropriate surveillance